香港申訴專員公署
Office of The Ombudsman, Hong Kong



主動調查報告
Direct Investigation Report

廢物分類回收桶的管理和成效
Management and Effectiveness of Waste Separation Bins

報告完成日期：2022年4月26日
Completion Date: 26 April 2022

報告公布日期：2022年4月28日
Announcement Date: 28 April 2022

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Executive Summary
Direct Investigation Report

Management and Effectiveness of Waste Separation Bins

Introduction

In 1998, the Government promulgated the Waste Reduction Framework Plan, advocating separate collection of recyclable materials to facilitate recovery and reuse. According to the Plan, Government departments would place waste separation bins (commonly known as "three-colour recycling bins" and hereinafter referred to as "recycling bins") at locations under their management for collection of waste paper, aluminium cans and plastic bottles, thereby encouraging the public to participate in waste reduction and recycling. Through the Source Separation of Waste Programme, the Environmental Protection Department ("EPD") also distributed recycling bins to participating residential, commercial and industrial buildings for free.

2. Around 18,000 sets of recycling bins are currently provided by various Government departments across the territory. Participating departments, including EPD, the Leisure and Cultural Services Department ("LCSD"), the Agriculture, Fisheries and Conservation Department ("AFCD") and the Housing Department ("HD"), arrange proper collection and maintenance services according to the situation and need of the locations or venues for effective management of the recycling bins.

3. The provision of recycling bins has been implemented for years. However, there were media reports that recycling bins were often mixed with litter, which contaminated the recyclables inside and affected the recycling effectiveness, and might have caused environmental hygiene problems. The media also reported that some recyclables collection service contractors ("the Contractors"), for various reasons, disposed of recyclables from recycling bins together with refuse, thus undermining public confidence in the authorities' effective management of the recycling bins. In this connection, we launched a direct investigation to examine the authorities' management of recycling bins and effectiveness in implementing the relevant programme, with a view to recommending improvement measures where necessary.

Our Comments

4. While the quantity of recyclables collected from recycling bins in public places such as roadside is limited, amounting to less than 0.1% of the total amount of recyclables in Hong Kong annually, these bins are very conspicuous in the community. The effectiveness of these bins will directly affect public confidence in the authorities' measures on waste separation and recovery.

5. Since 1 October 2020, EPD has taken over the management of recycling bins in public places from the Food and Environmental Hygiene Department ("FEHD") and implemented a number of improvement measures. The measures include designing a new look for the recycling bins and changing the original litter compartment for collection of recyclables (mainly plastic bottles) to increase collection capacity and reduce the chance of misplacement of litter into recycling bins by the public. A rapid reporting system has also been launched, enabling the public to use the QR code or hotline number on the recycling bins or WhatsApp, an instant mobile messaging application, to report matters such as overfilled or damaged bins to the Contractor directly. EPD has also stepped up the monitoring of the Contractor through different means, including the supervision teams formed by the Contractor as required by EPD, the quality assurance teams set up by a third-party organisation (i.e. the Hong Kong Productivity Council) and its own staff. Since the implementation of the above improvement measures by EPD, there has been initial improvement in the management of recycling bins in public places. We find the efforts of EPD commendable.

6. In light of our findings, we have the following comments.

Labels on Recycling Bins in Public Places

7. The existing labels on recycling bins in public places are rather simple. Users of recycling bins can obtain recycling information (such as the strategies of "Clean Recycling of Three Types of Paper" and "Priority Recovery of Plastic Bottles", or the clean recycling procedures) by scanning the QR codes on the bins. While EPD's idea of adding QR codes to the recycling bins is praise-worthy, it cannot be ruled out that some people do not bother to scan the QR codes and read the instructions. We reckon that the overly simple labels on the recycling bins fail to effectively minimise improper use of the bins and contamination of recyclables.

8. For more effective management of recycling bins in public places which are

prone to problems, and as part of its publicity and education initiatives, EPD should display recycling information in a more straight-forward manner for the public to learn about the proper way of using recycling bins more conveniently and speedily. As EPD expects to gradually install newly designed bins after field trials, we recommend that it review the existing labels on recycling bins in public places in one go, and consider providing more recycling information in textual and graphical forms on the newly designed bins.

Information Available on Mobile Application

9. At present, members of the public can use the "Waste Less" mobile application of EPD to search for the locations of all recycling bins in public places throughout Hong Kong. In our site visits on a random sample of recycling bins, we found inconsistencies of several locations indicated by the app with the actual site situation, with no recycling bins at the indicated locations or nearby. In our second round of site visits after three months, the information remained not updated which was unsatisfactory. Besides, photographs of recycling bins shown in the app still displayed former designs of bins in public places under the management of FEHD. Consequently, the public might mistakenly perceive that those bins were still managed by FEHD. We are pleased to note that EPD has updated the information on the app in early February 2022. We recommend that EPD update information available on the app in a timely manner to ensure its accuracy.

Collaboration with Other Departments

10. Taking reference from the collaboration models with AFCD and LCSD, EPD is liaising with HD to explore further enhancements to the waste separation programme implemented in public housing estates, so as to ensure proper collection of recyclables by downstream recyclers. EPD also continues to promote the Source Separation of Waste Programme to more Government departments and offer necessary support. It strives to strengthen individual departments' existing resource recovery practice, thereby raising and quantifying the recycling effectiveness.

11. Currently, among the departments responsible for recycling bin management, only EPD maintains statistics on the overall recovery rate of recycling bins. We consider the overall recovery rate of recycling bins highly useful for relevant departments to monitor the effectiveness of recycling bins, review their distribution and management strategies, and come to grips with the public's behaviour in relation to

waste recycling. We recommend that EPD provide departments responsible for recycling bin management with more technical support and actively encourage them to maintain more recycling data (such as the overall recovery rate of recycling bins), thereby facilitating the monitoring and adjustment of the management strategies of recycling bins.

Release of Data on Operation of Recycling Bins and Sharing of Successful Experience

12. The views we received from members of the public show that many of them are sceptical about the effectiveness of recycling bins. Such a public perception has apparently taken root over the years. As EPD has taken over the management of recycling bins in public places since October 2020 and introduced a number of improvement measures subsequently, we consider that EPD may release data on the operation of those bins regularly, including the total collection quantities, quantities of recyclables, recovery rate, reports of overfilled bins, etc. This will enhance transparency of its services and facilitate objective understanding of the current effectiveness of recycling bins by the public. If relevant data is available from other departments, EPD may consider releasing data on the operation of recycling bins managed by various departments in one go to provide a more comprehensive overview of their usage. More thorough, comprehensive and regular information disclosure should be conducive to boosting public confidence in using recycling bins.

13. Moreover, we recommend that EPD continue to step up publicity and education, including sharing via different channels successful cases about how members of the public use recycling bins. The success experience can encourage more people to take part in waste reduction and recovery, and revive public confidence in the effectiveness of recycling bins.

Long-term Policy on Recycling Bins in Public Places

14. According to EPD's information, Green@Community, the community recycling network developed progressively since 2015, is supported by the general public and a key ongoing initiative under the Waste Blueprint for Hong Kong 2035. In view of this development, EPD has removed roadside recycling bins located near Recycling Stores and increased the number of bins in rural areas for more effective use of resources.

15. In the long run, EPD anticipates a declining demand for roadside recycling bins in urban areas. The role of recycling bins will also gradually transform into providing waste recycling support mainly for remote rural areas and residential premises on scattered sites. Such bins may even be completely replaced by Green@Community. The role played by recycling bins in public places under the Government's overall policy on waste separation and recovery is a policy issue not subject to our comments. Nevertheless, EPD should work out a schedule to review the policy positioning of recycling bins in public places for deciding on the way forward, and explain its decision for the public to understand why recycling bins in the community may be gradually reduced in number.

16. Meanwhile, should EPD decide to retain recycling bins in public places after review, we urge it to continue assessing any impact arising from waste charging due to be implemented later, including the usage of bins and the quality of collected recyclables. Corresponding measures should be adopted to ensure that recycling bins in public places continue to achieve efficacy.

Recommendations

17. Overall, this Office has made the following recommendations to EPD:

(1) review the labels on recycling bins in public places and consider providing more recycling information in textual and graphical forms on the newly designed bins to enable the public to learn about the proper way of using recycling bins more conveniently and speedily;

(2) update the "Waste Less" mobile application in a timely manner to ensure accuracy of information about recycling bins in public places;

(3) continue strengthening collaboration with other departments responsible for recycling bin management and actively encourage them to maintain more recycling data, thereby facilitating the monitoring and adjustment of the management strategies of recycling bins;

(4) release data on the operation of recycling bins in public places regularly to enhance transparency of its services and facilitate objective understanding of the current effectiveness of recycling bins by the public;

(5) continue stepping up publicity and education, including sharing via different channels success cases about how members of the public use recycling bins, thereby encouraging more people to take part in waste reduction and recovery and reviving public confidence in the effectiveness of recycling bins; and

(6) work out a schedule to review the policy positioning of recycling bins in public places for deciding on the way forward, and explain its decision for the public to understand why recycling bins in the community may be gradually reduced in number or even completely replaced; if it is decided that recycling bins in public places be retained, continue assessing any impact arising from waste charging due to be implemented later, and adopt corresponding measures to ensure that recycling bins in public places will continue to achieve efficacy.

Office of The Ombudsman
April 2022

1

INTRODUCTION

BACKGROUND

1.1 In 1998, the Government promulgated the Waste Reduction Framework Plan, advocating separate collection of recyclable materials to facilitate recovery and reuse. According to the Plan, Government departments would place waste separation bins (commonly known as "three-colour recycling bins" and hereafter "recycling bins") at locations under their management for collection of waste paper, aluminium cans and plastic bottles, thereby encouraging the public to participate in waste reduction and recycling. Through the Source Separation of Waste ("SSW") Programme, the Environmental Protection Department ("EPD") also distributed recycling bins to participating residential estates as well as commercial and industrial ("C&I") buildings.

1.2 Despite the Government's installation of recycling bins in public places for years, there were media reports that recycling bins were often mixed with litter, which contaminated the recyclables inside and affected the recycling effectiveness, and might have caused environmental hygiene problems. The media also reported that some recyclables collection service contractors ("the Contractor"), for various reasons, disposed of recyclables from recycling bins together with refuse, thus undermining public confidence in the authorities' effective management of the recycling bins.

1.3 Against this background, The Ombudsman launched a direct investigation pursuant to section 7(1)(a)(ii) of The Ombudsman Ordinance on 30 November 2020 to examine the authorities' management of recycling bins and their effectiveness in implementing the relevant programme, with a view to recommending improvement measures where necessary.

SCOPE OF INVESTIGATION

1.4 This direct investigation is mainly targeted at EPD[1]. Its scope covers:

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[1] This Office also launched this direct investigation with the Environment Bureau. Subsequently, EPD provided a consolidated response on behalf of the Bureau.

- the recycling bin management measures adopted by EPD and four other major departments which have installed recycling bins, namely the Food and Environmental Hygiene Department ("FEHD"), the Leisure and Cultural Services Department ("LCSD"), the Agriculture, Fisheries and Conservation Department ("AFCD") and the Housing Department ("HD");

- EPD's monitoring of the Contractor;

- EPD's collaboration with and support for relevant Government departments as well as residential estates and C&I buildings under the SSW Programme in relation to recycling bin management;

- EPD's publicity and education on the recycling bin programme; and

- the way forward of the recycling bin programme.

PROCESS OF INVESTIGATION

1.5 In this direct investigation, this Office has:

- examined the information from EPD and the other four major departments which have installed recycling bins;

- invited views and information from the public;

- held meetings with EPD's senior management to discuss the subject in depth;

- conducted site visits jointly with EPD staff to learn more about the Contractor's daily routines; and

- conducted site visits to survey the usage of recycling bins in certain districts.

1.6 This Office received 45 submissions from members of the public. Many of them remarked that some roadside recycling bins often overflowed or were ineffective for recycling because of misplacement of litter. Some people were concerned about the Government's inadequate monitoring of the Contractor. Meanwhile, there were views that the Government's publicity and education about recycling bin strategies (such as "Clean Recycling of Three Types of Paper", "Priority Recovery of Plastic Bottles", and the clean recycling procedures) were inadequate. As a result, the public were uncertain how to use recycling bins properly, including what types of waste paper or plastic were suitable for putting into the bins. They suggested clear instructions on the types of recyclables be displayed on recycling bins in textual and graphical forms for

better user-friendliness. There were also suggestions that the Government should release data about recycling bins regularly for the public to understand and monitor their usage and effectiveness.

1.7 On 27 January 2022, we issued a draft investigation report to EPD, FEHD, LCSD, AFCD and HD for comments. This final report, upon considering and duly incorporating comments from the departments, was completed on 26 April 2022.

2

WASTE SEPARATION POLICIES AND INSTALLATION OF RECYCLING BINS

WASTE SEPARATION POLICIES AND TARGETS

Waste Reduction Framework Plan

2.1 In 1998, the Government promulgated the Waste Reduction Framework Plan to stipulate a number of methods for waste reduction. These included a system for separation of waste at source, advocating separate collection of recyclable materials by public and private organisations or residential estates to facilitate recovery and reuse. Subsequently, various Government departments, including FEHD, LCSD, AFCD and HD, installed recycling bins at locations under their management for collection of waste paper, aluminium cans and plastic bottles. The Plan set an overall target for reduction of municipal solid waste ("MSW"), i.e. reducing MSW for disposal at landfills by 58% in 2007 (versus 30% in 1997). However, no specific targets and expected outcomes were set for the recycling bin programme.

Policy Framework for Management of Municipal Solid Waste (2005–2014)

2.2 In 2005, the Government published "A Policy Framework for the Management of Municipal Solid Waste (2005–2014)" to lay down essential actions for tackling the waste issue. It proposed applying the "polluter pays" principle to foster waste prevention, reduction and recycling by economic incentives. Through a wide range of policies and measures, the Government aimed to achieve three targets: reducing the quantity of MSW generated in Hong Kong by 1% per annum up to 2014; increasing the recovery rate of MSW to 45% by 2009 and to 50% by 2014; and reducing the total quantity of MSW disposed of at landfills to less than 25% by 2014.

Hong Kong: Blueprint for Sustainable Use of Resources 2013–2022

2.3 In 2013, the Government issued the "Hong Kong: Blueprint for Sustainable

Use of Resources 2013–2022" with specific targets and a timetable towards a "Use Less, Waste Less" lifestyle. The overall targets were a 40% decrease in the per capita MSW disposal rate from 1.27 kg per day in 2011 to 0.8 kg by 2022, and an increase of the MSW recovery rate to 55%.

Waste Blueprint for Hong Kong 2035

2.4 In February 2021, the Government announced the Waste Blueprint for Hong Kong 2035 to put forward a new vision of "Waste Reduction • Resources Circulation • Zero Landfill" and promote six major areas of action[2]. The Blueprint's medium-term targets are to gradually reduce the per capita MSW disposal rate by 40 to 45% and raise the recovery rate to about 55% through MSW charging, other policies and legislation, waste reduction and recycling measures, and publicity and education; its long-term goal is to move away from the reliance on landfills by developing adequate waste-to-energy facilities.

2.5 In the area of waste separation under the Blueprint, EPD would progressively expand the coverage of the community recycling network, Green@Community, comprising Recycling Stations, Recycling Stores and Recycling Spots. Meanwhile, the community recycling network would also strengthen its on-site collection services for residential estates under the SSW Programme to ensure proper recycling of recyclables with lower market value. EPD would further promote the territory-wide waste paper collection and recycling services, and extend the waste plastics collection and recycling services to all districts in Hong Kong.

INSTALLATION OF RECYCLING BINS AND ROLES PLAYED BY DEPARTMENTS

2.6 Currently, relevant departments including EPD, LCSD and AFCD have installed and managed recycling bins at different public places. EPD stated that recycling bins in public places serve the major functions of educating the public to practise waste separation and recovery, as well as providing necessary recycling support for specific targets, including pedestrians, buildings without adequate space for placing recycling bins (such as single block buildings), villages in remote areas, LCSD venues, etc.

2.7 For residential premises, HD has placed recycling bins on the ground level of all public housing estates in Hong Kong. The Environmental Campaign Committee ("ECC") also provides free recycling bins for private residential and C&I buildings participating in the SSW Programme.

[2] The six major areas of action are Waste Reduction, Waste Separation, Resources Circulation, Industry Support, Innovation and Cooperation, and Education and Publicity.

FEHD and EPD

2.8 Before 30 September 2020, FEHD installed recycling bins in public places, including pavements, public transport interchanges and refuse collection points. It used an all-in-one design generally consisting of recycling bins and a separate compartment for litter. The locations of recycling bins were subject to regular patrols by FEHD staff. The street cleansing service contractors engaged by FEHD were responsible for cleaning the bins. Its recyclables collection service contractors collected and delivered the recyclables to designated recyclers for treatment according to contractual requirements, provisions and approved collection routes.

2.9 Since 1 October 2020, EPD has taken over from FEHD the management of recycling bins in public places. Under the new arrangement, EPD and FEHD manage the collection of recyclables and general waste on the street respectively. EPD has introduced a series of improvement measures subsequent to the takeover (see **Chapter 3** for details).

Figure 1: Different designs of recycling bins formerly used by FEHD (Photographs provided by FEHD)



Figure 2: Different designs of recycling bins subsequent to EPD's takeover (Photographs provided by EPD)



LCSD

2.10 LCSD is responsible for installing and managing recycling bins within the Government's leisure and cultural facilities under its management. Generally, the bins prepared by LCSD are based on the latest designs (including materials, appearance and labels on the bins) provided by EPD, on which LCSD's logo is affixed for recognition. Bin designs are also customised to suit the actual operational needs of individual leisure and cultural venues managed by LCSD. Moreover, taking reference from EPD's guidelines on the installation and distribution of recycling bins and litter containers in public places in Hong Kong, LCSD installs recycling bins at suitable locations in indoor/outdoor public spaces.

2.11 The recyclables collection services for LCSD venues are encompassed in the cleansing service contracts. The cleansing service contractors, responsible for collection of both recyclables and general waste, are required to collect and deliver materials from the bins to designated recyclers for treatment according to the modes and frequencies stipulated under the contracts. Regular patrols of recycling bins managed by LCSD are carried out by its staff and contractors.

Figure 3: Different designs of recycling bins used by LCSD according to venue needs
(Photographs provided by LCSD)



AFCD

2.12 AFCD generally installs recycling bins in high footfall areas, such as the recreational sites in country parks, the visitor centre of Hong Kong Wetland Park, Western Wholesale Food Market and Cheung Sha Wan Wholesale Food Market. The recycling bins installed by AFCD are customised for the venues. For instance, the bins in country parks and the wetland park only collect plastic bottles and aluminium cans, and those at barbecue sites have an extra compartment for barbecue forks.

2.13 AFCD staff patrol its facilities (including the recycling bins within the venues) daily. Its staff or cleansing service contractors collect materials from recycling bins several times per week, pending collection once to twice per month by recyclables collection service contractors. Furthermore, AFCD has initiated a publicity campaign with the theme "Take your litter home" for country parks in recent years, encouraging visitors to take away litter from country parks and practise waste reduction at source.

Figure 4: Different designs of recycling bins used by AFCD according to venue needs (Photographs provided by AFCD)



HD

2.14 HD has placed recycling bins on the residential ground level of all public housing estates in Hong Kong. Depending on circumstances, recycling bins are also installed at suitable locations in the common areas of some estates. Recycling bins might also be removed, added or relocated according to daily operational needs, the feedback of community stakeholders, etc. The staff of Estate Offices patrol the residential buildings and common areas (including the locations of recycling bins) daily.

2.15 The public housing estates under the Hong Kong Housing Authority are either directly managed by HD or outsourced to property services agents for management, while the daily work of contractors is monitored by HD staff. The duties of environmental management are encompassed in the cleansing services contracts and property management contracts awarded by HD. The contractors provide cleaning and

maintenance services for the bins, collect and deliver recyclables regularly to designated recyclers for treatment according to contractual requirements.

Figure 5: Different designs of recycling bins used by HD (Photographs provided by HD)



RELEVANT STATISTICS

2.16 Relevant statistics provided by EPD are tabulated below:

Table 1: Per capita disposal rates of MSW
(Source: Monitoring of Solid Waste in Hong Kong published by EPD annually)

		Year				
		2016	**2017**	**2018**	**2019**	**2020**
a.	Per capita disposal rate of domestic waste (kg per person per day)	0.87	0.87	0.90	0.87	0.91
b.	Per capita disposal rate of C&I waste (kg per person per day)	0.54	0.59	0.63	0.60	0.53
c.	Per capita disposal rate of MSW (kg per person per day) *((c)=(a)+(b))*	1.41	1.45	1.53	1.47	1.44

Note: Per capita waste disposal rate is the quantity of waste disposed of at landfills on a daily basis by an average person of the Hong Kong population.

Table 2: Recovery rates of MSW
(Source: Monitoring of Solid Waste in Hong Kong published by EPD annually)

		Year				
		2016	**2017**	**2018**	**2019**	**2020**
a.	MSW disposed of at landfills (million tonnes)	3.79	3.92	4.17	4.04	3.96
b.	MSW recovered for recycling (million tonnes)	1.91	1.83	1.78	1.64	1.54
c.	MSW generated (million tonnes) *((c)=(a)+(b))*	5.70	5.75	5.95	5.67	5.49
d.	Recovery rate of MSW *((d)=(b)/(c))*	34%	32%	30%	29%	28%

Table 3: Number of recycling bins[3]
(Source: EPD)

		Year					
		2016	**2017**	**2018**	**2019**	**2020**	**2021 (As at end of June)**
FEHD/EPD		1,985	1,981	1,981	1,982	1,806	1,768
LCSD		789	894	1,248	1,468	1,550	1,531
AFCD		1,546	1,373	1,246	1,159	1,069	1,005
HD and Hong Kong Housing Society		2,279	2,299	2,437	2,761	3,170	3,233
Provided by ECC[4]	Private estates/ buildings	4,953	5,019	5,259	5,695	6,167	6,451
	C&I buildings	1,992	2,084	2,200	2,413	2,481	2,506
	Schools	1,031	1,074	1,105	1,195	1,195	1,195
Total (set)		14,575	14,724	15,476	16,673	17,438	17,689

3 Other Government departments also install recycling bins at venues under their management as needed. The number of recycling bins under such arrangement is relatively small, on which EPD has not maintained statistics.

4 The figures include recycling bins at private estates, C&I buildings and schools, but exclude bins self-purchased by those premises.

Table 4: Overall recovery of MSW and quantities of recyclables (waste paper, metal and plastic) recovered from recycling bins
(Source: EPD)

		Year				
		2016	**2017**	**2018**	**2019**	**2020**
a.	Total quantity of recyclables recovered from MSW (thousand tonnes) **[i.e. item (b) in Table 2]**	1,912	1,831	1,778	1,639	1,538
b.	Paper, metal and plastic recyclables recovered from MSW (thousand tonnes)	1,811	1,742	1,675	1,501	1,408
c.	Paper, metal and plastic recyclables collected in bins installed by Government departments[5] (thousand tonnes)	30.4	32.1	36.0	36.3	36.7
d.	Quantity of recyclables reported to EPD by private estates/buildings participating in SSW Commendation Scheme[6] (thousand tonnes)	40.6	34.8	28.9	28.4	28.0

[5] The figures represent the total quantities of recyclables collected in recycling bins in public places (such as pavements, refuse collection points)/at venues managed by FEHD/EPD, AFCD, LCSD and HD.

[6] Participation in the SSW Commendation Scheme is voluntary. Every year, only a small portion of residential estates/buildings and C&I buildings under the SSW Programme concurrently participate in the Commendation Scheme and submit data of recyclables to EPD.

Table 5: Overall recovery rate of recycling bins
(Sources: EPD, FEHD, LCSD, AFCD and HD)

	Year				
	2016	**2017**	**2018**	**2019**	**2020**
FEHD	49%	57%	63%	62%	60%
EPD	Not applicable				64%[7]
LCSD	Statistics not available				
AFCD	Statistics not available				
HD	Statistics not available				
Private estates/buildings participating in SSW Commendation Scheme	Statistics not available				

Note: The recovery rate is calculated as the proportion of recyclables recovered from recycling bins against the total quantity of materials collected.

2.17 **Table 1** shows that the per capita disposal rates of MSW between 2016 and 2020 ranged from 1.41 kg to 1.53 kg per day, vastly exceeding the target of 0.8 kg per day by 2022 laid down in the "Hong Kong: Blueprint for Sustainable Use of Resources 2013–2022". As for recycling performance, **Table 2** shows a downward trend in the quantity of recyclables recovered from MSW over recent years, which decreased yearly from 1.91 million tonnes in 2016 to 1.54 million tonnes in 2020. The recovery rate also decreased yearly from 34% in 2016 to 28% in 2020. EPD attributed the decline in the overall quantity of MSW recovered and the recovery rate to the persisting downturn of global recycling markets. Moreover, nearby economies have steadily tightened and further strictly enforced import control in recent years. Local recyclables not meeting the import standards could no longer enter such places for processing.

2.18 Currently, various Government departments have installed around 18,000 sets of recycling bins across the territory (see **Table 3**). **Table 4** shows that recyclables recovered from recycling bins at the venues managed by EPD, AFCD, LCSD and HD accounted for an average of only 2% of the total quantity of recyclables recovered from MSW locally. Meanwhile, among the departments responsible for recycling bin management, only EPD has maintained statistics on the overall recovery rate of recycling bins (see **Table 5**).

7 The figure is a monthly average for the period between November 2020 and December 2021.

3

EPD’S MANAGEMENT OF RECYCLING BINS IN PUBLIC PLACES

IMPROVEMENT MEASURES FOR FINE-TUNNING OF RECYCLING BINS IN PUBLIC PLACES

New Looks and Labels of Recycling Bins

3.1 After taking over the management of recycling bins in public places such as roadside from FEHD in October 2020, EPD continued to use the bins formerly installed by FEHD, but designed a new look for and finetuned the bins to achieve the goal of “bigger Capacity, easy Reporting”. The original litter compartment was converted into collection of recyclables (mainly plastic bottles) (see **Figure 2**) to increase collection capacity and reduce the chance of misplacement of litter into recycling bins by the public, thereby enhancing the cleanliness of recyclables. Meanwhile, as at end-2021, EPD had repaired around 400 sets of damaged recycling bins. After the takeover of recycling bin management, EPD and FEHD are responsible for the collection services of recyclables and general waste respectively. Through separate collection of recyclables, EPD strives to strengthen public confidence in the collection services provided for recycling bins.

3.2 EPD launched a rapid reporting system with new labels affixed on recycling bins, providing a QR code and the Contractor’s service hotline number (see **Figure 6**). Apart from reporting via 1823 or EPD’s hotline, the public can also use the QR code or service hotline on the recycling bins or WhatsApp, an instant mobile messaging application, to report matters such as overfilled or damaged bins to the Contractor directly.

Figure 6: New label affixed on recycling bins in public places (Source: EPD)



3.3 Moreover, a QR code about "Clean Recycling" is printed on the new labels of recycling bins. By scanning the QR code, the public can obtain recycling guidelines (see **Figure 7**), such as the types of recyclables and the proper procedures for clean recycling. EPD has also attached the message "I am not a litter bin" (see **Figure 8**) to some roadside recycling bins to remind the public of the fine-tuning and to differentiate the recycling bins from the litter bins.

Figure 7: Recycling guidelines of "Clean Recycling of Three Types of Paper", "Priority Recovery of Plastic Bottles" and clean recycling procedures (Source: EPD)



Figure 8: Roadside recycling bin with the message "I am not a litter bin" (Source: EPD)



Installation and Management of Recycling Bins

3.4 As at end-December 2021, 1,885 sets of recycling bins were installed by EPD in public places. Collection services were provided at a frequency from one to seven times per week (see **Table 6**). The Contractor is also required to provide contingency collection services for occasionally overfilled bins. The locations of recycling bins throughout Hong Kong are uploaded to EPD's "Waste Less" mobile application for the public to search for the information any time with their mobile devices, such as smart phones.

Table 6: Frequency of regular collection for recycling bins in public places (Source: EPD)

Collection frequency	No. of recycling bins (set)
1 time per week	862
2 times per week	353

Collection frequency	No. of recycling bins (set)
3 times per week	426
4 times per week	98
5 times per week	51
6 times per week	50
7 times per week	45
Total	**1,885**

3.5 To reduce cases of overfilled bins, EPD has adjusted the number, distribution and collection services of recycling bins by constantly monitoring the reports of overfilled bins and the quality of collected recyclables, taking into account the development of complementary recycling facilities in the neighbourhood and the community's situation and needs. For instance, since late 2020, EPD has set up 22 Recycling Stores across all 18 districts in Hong Kong to provide one-stop collection services for eight types of recyclables and night-time self-service recycling. This has provided convenient recycling support for the areas, especially those densely populated with many single-block buildings. Given the development, EPD has removed roadside recycling bins located near Recycling Stores for more effective use of resources.

3.6 Moreover, according to relevant experience and data, recycling bins near such locations as food premises and markets are generally more susceptible to contamination by misplacement of litter by passers-by. EPD has gradually relocated those recycling bins to near domestic areas with fewer commercial outlets, so as to enhance recovery rates.

3.7 For rural areas and residential premises on scattered sites, roadside recycling bins are the major waste separation facilities in the community. The recyclables collected from those areas are generally more satisfactory in terms of quality and quantity. Since some recycling bins are still relatively far away from the clusters of village houses in certain rural areas, EPD, after liaising with the relevant rural committees and village representatives, has installed more recycling bins to strengthen the recycling support in a number of rural areas. As at December 2021, EPD had added 180 sets of recycling bins in rural areas.

MONITORING OF COLLECTION SERVICE CONTRACTOR

Contractual Service Requirements and Performance Indicators

3.8 EPD divided the collection service contracts for recycling bins in public

places into four regions (Hong Kong and outlying islands, Kowloon, New Territories East and New Territories West) and invited tenders according to the Government's Stores and Procurement Regulations. EPD evaluated the technical and price proposals for delivery of service by the tenderers under a marking scheme, with a weighting of 70% and 30% given to technical and price scores respectively. Currently, all four regional contracts are awarded to a single contractor[8] for two years up to 30 September 2022.

3.9 According to the service contracts, the Contractor is required to provide regular collection services between 8 am and 6 pm according to the frequency specified by EPD. At the time of collection, the Contractor should clean the recycling bins and keep the ground and bins clean. Upon receiving reports of occasionally overfilled bins, it should inspect and clean them up within one working day and reply to the complainant. It is also responsible for arranging repair of damaged bins, and restoration of worn-out bins as requested by EPD within seven working days; sorting and delivering recyclables to downstream recyclers endorsed by EPD, etc.

3.10 The Contractor is also required to set up and manage a customer service system, follow up on and record relevant complaints, opinions and enquiries, and clearly specify its service hotline on the bins. EPD requests the Contractor to handle public enquiries and complaints according to their complexity. It should prioritise complaints or reports of overfilled bins requiring urgent attention for public hygiene, and issue a reply to the complainant within one working day. Opinions or complaints of other categories should be replied to within 15 working days.

3.11 If the Contractor is found in breach of contractual provisions, EPD will take proper action according to the circumstances, including issuing verbal/written warnings and default notices, as well as deducting monthly service fees. Where the performance of any downstream recycler falls short of the requirements, EPD can instruct the Contractor to substitute it. Moreover, EPD has included a tenderer's prior record of default notices in the assessment of technical proposals. In future tenders for new contracts, the number of default notices issued to the Contractor will affect its technical score.

Contractor Required to Form Supervision Teams

3.12 EPD has inserted new provisions in the service contracts, requiring the Contractor to form supervision teams to oversee the operation of frontline collection services and suggest improvement measures where necessary. The supervision teams are required to patrol, according to patrol lists, not less than 100 sets of recycling bins per week in each of the four regions across Hong Kong, and submit weekly reports of

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[8] The public views we received during this investigation included that the award of existing contracts for the collection services of recycling bins in public place to a single contractor could lead to inflexibility. EPD responded that various Government departments and public/private organisations independently engage contractors to provide recyclables collection services. Overall, EPD has not identified any monopolies and situations detrimental to the development of the recycling industry. EPD will keep a close watch on the Contractor's performance and take proper action where necessary.

patrol and follow-up action to EPD. Where any recycling bin is found 70% full of its capacity, the supervision teams should arrange contingency collection services immediately. The Contractor is required to submit to EPD such data as the quantities and dates of recyclables collected and delivered to downstream recyclers. The supervision teams will conduct spot checks on the data.

3.13 Between October 2020 and December 2021, the supervision teams conducted around 25,800 site patrols and identified around 2,000 cases of overfilled bins (according to EPD's recyclables collection service contracts, a recycling bin filled up to 70% of capacity is deemed as overfilled). All cases were handled immediately.

Quality Assurance Teams Engaged to Assist in Monitoring the Contractor

3.14 EPD has commissioned the Hong Kong Productivity Council as the quality assurance teams to assist in monitoring the Contractor's performance by spot checks, ongoing site surveillance and undercover investigation. The quality assurance teams also report isolated incidents, such as delays of collection service teams due to road traffic condition, to EPD to facilitate its proper follow-up action with the Contractor.

3.15 The quality assurance teams will patrol the Contractor's sorting facility to inspect its sorting procedures and the operation of downstream recyclers, and make improvement suggestions. For instance, to raise the overall recovery rate of plastics, the quality assurance teams recommended that the Contractor cut open the plastic bags containing recyclables before sorting, so as to enhance the efficiency of workers. The recommendation was accepted by the Contractor. The quality assurance teams also evaluate the service quality of the Contractor's complaint service hotline by means of "mystery customer" research, and make recommendations for improvement to optimise the overall collection services of recycling bins.

3.16 The quality assurance teams' investigation showed that the Contractor's frontline workers had performed duties generally in line with contractual requirements, including wearing tidy uniforms when carrying out collection services, keeping the ground and recycling bins clean when collecting recyclables, properly handling the recyclables, and handling complaints and issuing replies according to the time frames stipulated under the service contracts.

EPD's Monitoring of the Contractor

3.17 After taking over the management of recycling bins in public places, EPD has created nine new posts mainly responsible for procuring and monitoring the management of recycling bins and relevant contracts, continuously reviewing the usage of recycling bins, adjusting the distribution and management strategies of recycling bins, and promoting the proper use of recycling bins.

3.18 EPD monitors the Contractor's service quality by spot checks and making reference to public reports or complaints, comments from the quality assurance team

and findings of the Contractor's supervision teams. It also conducts focused checks on recycling bins at high-risk locations to review the quality and quantity of recyclables. EPD has drawn up internal guidelines on the patrol of recycling bins, including a four-tier grading for the cleanliness of recyclables collected from the bins, and a checklist related to collection services. Patrol officers are required to not only input details for all items on the checklist (such as condition of recycling bins, performance of collection services by the Contractor, etc.), but also take photographs for records.

3.19 In 2021, EPD conducted around 3,800 focused checks and 40 on-site surprise checks. It found that the Contractor had provided collection services at collection points generally as scheduled, properly collected recyclables and emptied recycling bins. In isolated cases of failing to empty recycling bins as scheduled due to rainy weather and road conditions, the Contractor completed the services subsequently.

3.20 The Contractor is required to submit regular reports to EPD with details of all enquiries and complaints received monthly and its follow-up action, records of patrol and follow-up action of the supervision teams, and quantities of recyclables collected monthly and recovery rates. The supervision teams also submit weekly records of patrol and follow-up action to EPD to facilitate its monitoring of the performance of collection services.

3.21 We have scrutinised a random sample of reports submitted to EPD by the Contractor in August 2021. The Contractor's reports included information and data requested by EPD, as well as an analysis of the 121 enquiries and complaints received in that month. Of them, 113 cases were properly handled according to contractual requirements. For the remaining eight cases, the supervision teams conducted site inspection and investigation to probe why follow-up action had not been taken according to contractual requirements, and gave an account of its findings and suggested improvement measures in the reports.

EFFECTIVENESS

3.22 After EPD took over the management of recycling bins in public places and implemented the above improvement measures, the number of recycling bins increased from 1,821 sets in September 2020 before the takeover to 1,885 sets in December 2021. Most of the additional bins were installed in rural areas, where more clean recyclables of higher quality were collected (see **para. 3.7**). Moreover, as recycling bins were gradually relocated away from food premises and markets, it became less likely for waste and contaminants to be mingled in the bins (see **para. 3.6**). Consequently, the overall quantity and quality of recyclables have improved. In 2021, the monthly quantity of recyclables collected from recycling bins averaged 116 tonnes, higher than the monthly average of 102 tonnes in 2019 and 2020. The overall recovery rate of recycling bins also reached a monthly average of 64%[9], higher than the 60% before

[9] EPD has not maintained statistics on the recovery rates of individual recycling bins.

EPD's takeover.

3.23 The number of monthly reports of overfilled bins in public places decreased from 149 in October 2020 to 44 in December 2021 (see **Table 7**). The newly introduced rapid reporting system (see **para. 3.2**) was widely accepted and used by the public. Around two-thirds of the reports and complaints were lodged with the Contractor directly by means of QR code, service hotline or WhatsApp, an instant mobile messaging application.

Table 7: Monthly reports of overfilled bins[10] in public places
(Source: EPD)

Month	No. of reports of overfilled bins
October 2020	149
November 2020	133
December 2020	99
January 2021	54
February 2021	75
March 2021	59
April 2021	66
May 2021	68
June 2021	66
July 2021	66
August 2021	66
September 2021	66
October 2021	84
November 2021	53
December 2021	44
Total	**1,148**

[10] According to EPD's recyclables collection service contracts, a recycling bin filled up to 70% of capacity is deemed as overfilled.

3.24 Between October 2020 and December 2021, the site patrols of EPD and the quality assurance teams did not find any cases of the Contractor failing to handle recyclables according to contractual requirements. Between October 2020 and December 2021, EPD did not receive any public complaints about dumping of recyclables by the Contractor.

4

EPD's Support for Entities Responsible for Recycling Bin Management

COLLABORATION WITH AND SUPPORT FOR GOVERNMENT DEPARTMENTS

4.1 Government departments participating in recycling bin management arrange proper collection and maintenance services according to the situation and need of their venues for effective management of the recycling bins. In general, departments arrange for venue staff or cleansing service contractors to empty recycling bins and collect recyclables regularly, record the quantities of different types of recyclables and deliver the same to downstream recyclers for treatment. Venue staff also monitor the usage of recycling bins and the collection of recyclables. EPD offers technical support in various areas as requested by departments (including AFCD, LCSD and the then FEHD), such as inputs on draft contracts for recycling bin management and site inspections to evaluate whether downstream recyclers conform to the requirements. EPD also makes suggestions on the suitable types of recyclables, and provides technical and promotional support for clean recycling.

4.2 Regarding recycling bins in public housing estates, EPD's Green Outreach team provides the latest recycling information and support as requested by HD, such as posters on various waste reduction programmes and stickers of recycling bins, so as to step up disseminating the messages of waste reduction at source and clean recycling. Moreover, before the pandemic, the Green Outreach had already launched publicity, education and promotion activities for public housing estates in certain districts (such as Sha Tin, Kwun Tong and Eastern), with support and training provided to frontline staff, residents' organisations and cleansing service contractors. The Green Outreach also joined hands with HD to organise the publicity programme "Green Delight in Estates" to promote waste reduction and recovery to public housing residents.

4.3 EPD considered it feasible to extend the above collaboration models with AFCD and LCSD (see **para. 4.1**) to other departments (such as HD), thereby raising the

community's overall recovery rate. EPD is liaising with HD to explore further enhancements to the waste separation programme implemented in public housing estates, so as to ensure proper collection of recyclables by downstream recyclers for conversion into useful materials.

4.4 Currently, Government departments use recycling bins in different designs. EPD has reviewed and updated, jointly with relevant departments, the design of recycling bins for general public places. Field trials at selected locations, including roadsides and LCSD venues, are conducted in phases. The new design is expected to be rolled out gradually after completion of field trials.

4.5 Going forward, EPD will continue to promote the SSW Programme to more Government departments and offer necessary support. It strives to assist individual departments in strengthening existing resource recovery practices, as well as raising and collecting data on recycling effectiveness.

SUPPORT FOR PRIVATE ESTATES/BUILDINGS PARTICIPATING IN SSW PROGRAMME

4.6 In 2005, EPD introduced the territory-wide SSW Programme for domestic sector, and enlarged its scope to C&I buildings and community service facilities in 2007. The SSW Programme aims at encouraging residential estates and C&I buildings to install recycling bins and facilitate waste separation at source by the public.

4.7 In 2008, EPD joined forces with ECC to launch the Promotion Programme on SSW, under which recycling bins were distributed free of charge to participating residential and C&I buildings. As at end-2021, more than 2,400 residential estates and 1,100 C&I buildings in Hong Kong had joined the Programme, with recycling bins covering the living and working venues of over 80% of the population. Through the SSW Commendation Scheme, EPD also encourages participating residential and C&I buildings under the SSW Programme to record the weights of paper, metal and plastic recyclables collected, and submit such data to EPD monthly. EPD issues awards at different levels to residential or C&I buildings according to the annual quantity of waste recovered, and offers recycling support on a need basis. Apart from documentary audits, from 2018/19, EPD would conduct on-site audits of a random sample of estates or buildings awarded at different levels every year. The audits involve reviewing the collection of recyclables, generation of waste, list of downstream recyclers, receipts of recyclables, etc, to verify the actual recycling performance of the estates or buildings.

4.8 To strengthen on-site support for recycling, EPD set up the Green Outreach in 2018 to provide outreaching service. Pilot outreaching service was launched in three districts, namely the Eastern District, Kwun Tong and Sha Tin, in late 2018. The Green Outreach visited the residential estates and buildings participating in the SSW Programme to conduct on-site assessment and assist the property management agents in enhancing their recycling arrangements, such as suggesting suitable locations for

placing recycling bins, providing posters and recycling bin stickers, assisting in identifying proper downstream recyclers, and explaining the guidelines on implementing waste separation at source[11]. The Green Outreach also encouraged large residential estates to expand the recycling programme to cover glass containers, small electrical appliances, etc., in addition to items under the traditional three-colour recycling model.

4.9 The Green Outreach gradually expanded the outreaching service to the Southern District, Kowloon City, Tsuen Wan, Tuen Mun, Tai Po and Sai Kung in mid-2020, and to the remaining nine districts in 2021. The number of residential estates and buildings participating in the SSW Programme continued to rise with the outreaching service initiated by the Green Outreach across the territory (see **Table 8**).

Table 8: Number of estates/buildings participating in SSW Programme and SSW Commendation Scheme (Source: EPD)

Year	Estates/ buildings participating in SSW Programme (domestic)	Estates/ buildings participating in SSW Commendation Scheme (domestic) and submitting data of recyclables	Buildings participating in SSW Programme (C&I)	Buildings participating in SSW Commendation Scheme (C&I) and submitting data of recyclables
2016/17	2,107	904	928	440
2017/18	2,143	843	963	426
2018/19	2,172	735	1,022	607
2019/20	2,231	812	1,076	538
2020/21 (As at end of July 2021)	2,362	906	1,121	492

4.10 Residential estates or buildings awarded under the SSW Commendation Scheme are presented with a digital certificate. EPD is contemplating to film or produce multimedia content (such as photographs, videos, etc.) for award winners in a

11 Guidelines on implementing waste separation at source in housing estates are available on EPD's website (https://www.wastereduction.gov.hk/sites/default/files/guide_property_mgr_en_Sep2021.pdf) for public reference.

bid to mobilise more residents in those estates to practise waste separation at source and clean recycling. To further enhance the appeal of the SSW Commendation Scheme, EPD may also upload the content to its website or social media to share the success experience with the public, other property management agents or residents' organisations.

5

EPD's Publicity and Education for Recycling Bin Programme

PROMOTING PROPER USE OF RECYCLING BINS

5.1 Since late 2017, EPD's publicity has focused on "Clean Recycling of Three Types of Paper" and "Priority Recovery of Plastic Bottles", i.e. mainly collecting three types of waste paper (newspaper, office paper and cardboard) and prioritising the recovery of waste plastic bottles (bottles of beverage and personal care products). The public can take non-bottle plastic waste to the collection points of the community recycling network, Green@Community, after storing a certain quantity. In addition to roving exhibitions, publicity campaigns and TV announcements in the public interest on local channels, EPD also promotes proper recycling methods via activities jointly held with various groups and organisations. Moreover, EPD disseminates the relevant messages by multiple means, including posters, pamphlets, "Waste Less" mobile application and social media, thereby promoting the importance of clean recycling and proper separation of recyclables.

5.2 Since 2018, EPD has provided FEHD, LCSD and HD with posters about "Clean Recycling of Three Types of Paper" and "Priority Recovery of Plastic Bottles" (see **Figure 7**) for display. From October 2018, EPD also started the phased replacement of recycling bin labels with new ones bearing the same messages (see **Figure 9**) for residential estates and buildings under the SSW Programme. In response to the latest development of waste reduction and recycling policies, EPD will review the labels and publicity messages in a timely manner.

Figure 9: Recycling bin labels about "Clean Recycling of Three Types of Paper" and "Priority Recovery of Plastic Bottles"
(Source: EPD)



5.3 EPD indicated that after years of publicity, the concept of three-colour recycling (i.e. "Blue for paper, yellow for aluminium cans and brown for plastic bottles" and subsequently "Blue for paper, yellow for metal and brown for plastic") has been widely recognised and accepted by the public. An EPD questionnaire survey in mid-2020 about the use of recycling bins and mobile collection points revealed that more

than 80% of the 764 respondents had used recycling bins. More than 50% of them considered roadside recycling bins to be "useful" to "very useful" to waste separation.

PUBLICITY AND EDUCATION IN COMMUNITY

5.4 Through the outreaching service provided by the Green Outreach, EPD strives to establish connections with community stakeholders such as owners' corporations, property management agents, cleansing workers, residents' organisations and rural representatives to strengthen on-site support, publicity and education at the community level regarding waste reduction and recycling. The Green Outreach also organises promotional activities in the community to educate and encourage the public to practise waste separation at source, waste reduction and recycling, and disseminates the latest information on such issues. As at December 2021, the Green Outreach had conducted 107,000 visits and established connections with around 3,350 property management offices and residents' organisations. Around 2,000 publicity and promotional activities had been held, attended by more than 162,000 participants.

5.5 Moreover, to prepare for the implementation of waste charging, the Green Outreach has stepped up publicity and education on waste reduction and recycling, such as a series of events entitled "Green@District 2021" (see **Figure 10**) between September and November 2021 jointly held with local residential estates and stakeholders in 16 districts across Hong Kong. The events fostered a green living culture in the community and encouraged the public to form the habits of waste reduction, separation at source and clean recycling. The Green Outreach is also enhancing the recycling support for rural areas. For instance, in September 2021, a six-month pilot scheme was initiated in Sha Tin, Tai Po and North districts, with 100 events held in around 50 villages to collect recyclables from rural residents. Through workshops and other activities, rural residents were educated to integrate waste reduction and resource recovery into daily lives.

Figure 10: Snapshots of Green@District 2021
(Source: EPD)





TERRITORY-WIDE PUBLICITY CAMPAIGN

5.6 In mid-2020, EPD launched the territory-wide “Reduce and Recycle 2.0” campaign to introduce the community recycling network, Green@Community, and the eight types of recyclables (i.e. waste paper, plastics, metals, glass containers, regulated electrical equipment, small electrical appliances, fluorescent lamps and tubes, and rechargeable batteries). Members of the public are encouraged to bring the various types of recyclables to the facilities to achieve “Save More, Recycle More”.

6

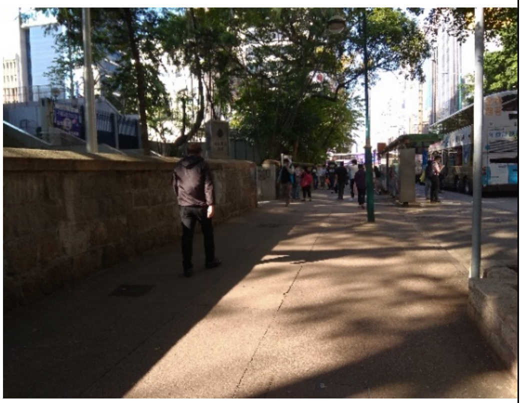
SITE VISITS

RECYCLING BINS IN YAU TSIM MONG AND WAN CHAI DISTRICTS

6.1 To learn more about the management and actual usage of recycling bins in public places, this Office conducted site visits in Yau Tsim Mong and Wan Chai districts on 23 August and 26 November 2021. We inspected more than 50 sets of roadside recycling bins based on their locations indicated by EPD's "Waste Less" mobile application. Overall, most recycling bins were in good and largely hygienic condition. Only a small number of them were found to be graffitied.

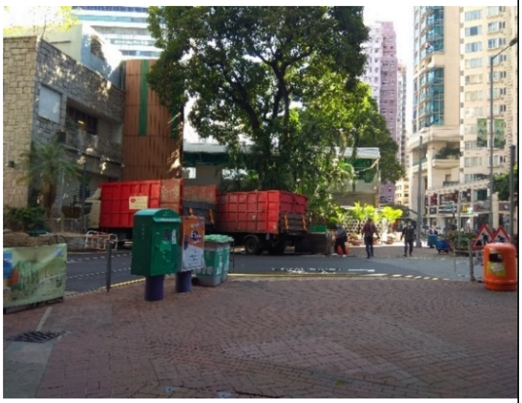
6.2 Nevertheless, we found inconsistencies of several locations indicated by the app with the actual site situation, a small number of damaged bins and repeated overflowing of certain bins. Details of our site visits are as follows.

	Location of recycling bins indicated by "Waste Less" mobile application	**Observation of our site visits**
Location 1 (Figures 11 to 13)	**Figure 11**  (Screenshot captured on 23 Aug and 26 Nov)	**Figure 12**  (Photo taken on 23 Aug)

	Location of recycling bins indicated by "Waste Less" mobile application	Observation of our site visits
		Figure 13  (Photo taken on 26 Nov)
Location 2 (Figures 14 to 16)	**Figure 14**  (Screenshot captured on 23 Aug and 26 Nov)	**Figure 15**  (Photo taken on 23 Aug) **Figure 16**  (Photo taken on 26 Nov)

	Location of recycling bins indicated by "Waste Less" mobile application	Observation of our site visits
Location 3 (Figures 17 to 19)	**Figure 17**  (Screenshot captured on 23 Aug and 26 Nov)	**Figure 18**  (Photo taken on 23 Aug) **Figure 19**  (Photo taken on 26 Nov)
Location 4 (Figures 20 to 22)	**Figure 20**  (Screenshot captured on 23 Aug and 26 Nov)	**Figure 21**  (Photo taken on 23 Aug)

	Location of recycling bins indicated by "Waste Less" mobile application	**Observation of our site visits**
		Figure 22  (Photo taken on 26 Nov)
Location 5 (Figures 23 to 25)	**Figure 23**  (Screenshot captured on 26 Nov)	**Figure 24**  (Photo taken on 26 Nov) **Figure 25**  (Photo taken on 26 Nov)

	Location of recycling bins indicated by "Waste Less" mobile application	Observation of our site visits
Location 6 (Figures 26 to 28)	**Figure 26**  (Screenshot captured on 26 Nov)	**Figure 27**  (Photo taken on 26 Nov) **Figure 28**  (Photo taken on 26 Nov)
Location 7 (Figures 29 to 31)	**Figure 29**  (Screenshot captured on 23 Aug and 26 Nov)	**Figure 30**  (Photo taken on 23 Aug)

	Location of recycling bins indicated by "Waste Less" mobile application	**Observation of our site visits**
		Figure 31  (Photo taken on 26 Nov)

6.3 According to the app, recycling bins should have been installed at locations 1 to 4 (see **Figures 11, 14, 17 and 20**), but we did not find any there or nearby during the site visit on 23 August 2021 (see **Figures 12, 15, 18 and 21**). The situation remained the same during our second site visit on 26 November 2021 (see **Figures 13, 16, 19 and 22**), although the app still indicated the provision of recycling bins at such locations. This reflects inconsistencies of information provided by the app with the actual site situation. Besides, photographs of recycling bins shown in the app still displayed former designs (see **Figures 11, 14, 17 and 20**) of bins under the management of FEHD (see **Figure 1**).

6.4 We found recycling bins at locations 5 and 6 (see **Figures 23 and 26**) during our site visits, but not where the app actually indicated (see **Figures 24, 25, 27 and 28**). At location 5, the recycling bins were placed in the rear lane beside a refuse collection point, surrounded by many miscellaneous objects (see **Figures 24 and 25**). At location 6, the doors of the two compartments for waste paper and plastic bottles were damaged (see **Figure 28**). During both of our site visits, the recycling bins at location 7 (see **Figure 29**) overflowed (see **Figures 30 and 31**), and the situation was particularly worse during our second visit (see **Figure 31**).

6.5 In response to our draft investigation report, EPD indicated that it had reviewed the details of all recycling bins in public places available on the app and identified around 30 sets of recycling bins with information not up to date, accounting for less than 2% of the total (1,885). EPD has updated the relevant information in early February 2022.

RECYCLING BINS IN SHA TIN DISTRICT AND CONTRACTOR'S SORTING FACILITY IN NORTH DISTRICT

6.6 On 5 October 2021, with EPD's arrangements, we inspected recycling bins

in Sha Tin district and the Contractor's sorting facility in North district to learn more about the Contractor's procedures from collection, delivery and sorting of recyclables, EPD's mechanism for the patrol of recycling bins, and the usage of recycling bins. Overall, the Contractor's procedures for handling recyclables were largely in order, and EPD had set stringent requirements for inspection items (see **para. 3.18**).

6.7 Moreover, we noted during the site visit that most plastic bottles collected from the recycling bins of rural areas had been rinsed and cleaned (see **Figure 32**). Such recyclables were obviously in better quality than those collected from the recycling bins of urban areas, in line with EPD's observation (see **para. 3.7**).

Figure 32: Materials collected from roadside recycling bins of a rural area in Sha Tin (Photograph taken by our officer on 5 October 2021)



6.8 Meanwhile, we noted the low usage of recycling bins at certain locations during our site visit. For instance, a set of 5-in-1 recycling bins (with two extra compartments for plastic bottles) were placed by EPD at location 8, with collection services provided once a week. The location was beside a public toilet at the waterfront, where no residential or C&I buildings were nearby. When observing the collection services carried out by the Contractor's workers (see **Figure 33**), our officer noted very few recyclables in each compartment (see **Figure 34**).

Figure 33: Emptying the recycling bins at location 8	**Figure 34: Recycling bin compartment for plastic bottles at location 8**
	
(Photographs taken by our officer on 5 October 2021)	

7

WAY FORWARD OF RECYCLING BINS

ESTABLISHMENT OF COMMUNITY RECYCLING NETWORK

7.1 According to the Waste Blueprint for Hong Kong 2035 announced by the Government in February 2021 (see **para. 2.5**), EPD would continue to establish the community recycling network, Green@Community, with a view to providing more adequate recycling outlets for every district in Hong Kong and facilitating waste separation at source and recycling by the public. Operated by non-governmental organisations, Green@Community comprises three scale levels (large, medium and small), namely Recycling Stations, Recycling Stores and Recycling Spots.

Recycling Stations

7.2 Since 2015, the Government has initiated projects to operate Recycling Stations (see **Figure 35**). As at end-2021, 11 Recycling Stations had commenced operation across the territory, and more than 15,000 tonnes of recyclables in aggregate had been collected. More than 8,600 environmental education activities, including exhibitions, seminars, workshops or other events, had been held, and more than 2.5 million visits were received.

Figure 35: Recycling Station
(Source: EPD)



Recycling Stores

7.3 Since late 2020, EPD has regularised the funding support to establish 22 Recycling Stores (see **Figure 37**) across all 18 districts in Hong Kong, replacing the Community Recycling Centres (see **Figure 36**) previously subsidised by the Environment and Conservation Fund on a project basis. Located closer to the neighbourhood, Recycling Stores open all year round except Christmas and Lunar New Year holidays to provide one-stop collection services for eight types of common recyclables, i.e. waste paper, plastics, metals, glass containers, regulated electrical equipment, small electrical appliances, fluorescent lamps and tubes, and rechargeable batteries. Recycling Stores also provide night-time self-service recycling and complementary recycling services, including on-site collection for buildings in the district and setting up Recycling Spots. Residents of single-block and “3-nil” buildings without waste separation facilities are the major service targets of Recycling Stores. In 2021, Recycling Stores collected over 9,000 tonnes of clean recyclables in aggregate, more than four times the quantity collected by the previous Community Recycling Centres. Owing to the popularity with the public, EPD plans to establish 10 more Recycling Stores, which gradually commence operation since early 2022.

Figure 36: Community Recycling Centre in the past	**Figure 37: Recycling Store with a new image**
	
(Source: EPD)	

Recycling Spots

7.4 Since late 2020, EPD has progressively set up, via the operators of Recycling Stations and Recycling Stores, more than 100 Recycling Spots (see **Figure 38**) with fixed locations and schedules on a weekly basis across all 18 districts in Hong Kong. The quantity of recyclables collected in one session (three hours) by many Recycling Spots can reach hundreds of kilograms.

Figure 38: Recycling Spot
(Source: EPD)



Smart Recycling System

7.5 To tie in with smart city development, EPD launched the pilot Smart Recycling System in the fourth quarter of 2020 for phased testing of local application of smart recycling facilities, with a view to enhancing community recycling services and efficiency. Positive results were obtained in the initial phase. In the next phase, it is planned to install the smart recycling system at more locations (including Green@Community network facilities, large residential estates and other venues) to significantly increase the number of trial sites from four to around 80 to 100, with more extensive scope of technical trials. In the first quarter of 2021, EPD also launched a one-year pilot scheme on Reverse Vending Machines ("RVMs"). Members of the public can return plastic beverage containers at the 60 RVMs installed at various locations and receive instant rebates via e-payment platform. EPD has planned to gradually increase the number of RVMs to 120 in 2022.

7.6 To encourage more people to participate in waste separation and recycling, EPD launched the GREEN$ Electronic Participation Incentive Scheme (see **Figure 39**) in November 2020. By taking clean recyclables to any collection points of Green@Community or directly depositing them into smart recycling bins, members of the public can earn GREEN$ points for redemption of gifts (daily necessity products in general). As at end-December 2021, more than 120,000 (family) members were registered under the scheme, and around 150 tonnes of clean recyclables were handed in per week through the GREEN$ point system.

Figure 39: Introductory information on GREEN$ Electronic Participation Incentive Scheme
(Source: EPD)



LONG-TERM DEVELOPMENT OF RECYCLING BINS IN PUBLIC PLACES

7.7 EPD stated that paper and metal recyclables usually found in domestic waste are of higher commercial value. Consequently, community stakeholders (such as cleansing contractors, property management agents, owners' corporations, etc.) prefer handling such recyclables in private market. The Green@Community network and recycling bins in public places essentially complement the private market to provide stable and reliable outlets for recyclables of lower commercial value or unable to be handled via private market (such as non-bottle plastic waste, glass containers and rechargeable batteries).

7.8 The quantity of recyclables collected from recycling bins in public places such as roadside was limited, amounting to around 1,000 tonnes or less than 0.1% of the overall quantity of recyclables each year. With the progressive development of the Green@Community network and the implementation of EPD's various waste reduction and recovery programmes, more people practise recycling through Green@Community, the SSW Programme and other schemes. EPD anticipates a declining demand for roadside recycling bins in urban areas. The role of recycling bins will also gradually transform into providing waste recycling support mainly for remote rural areas and residential premises on scattered sites. Such bins may even be completely replaced by Green@Community as it continues to evolve. EPD will continuously review the usage of recycling bins in public places such as roadside, and make proper adjustments. Meanwhile, it will enhance transparency of its management services, such as releasing data of recyclables collected, the number and distribution of recycling bins on its website, to facilitate effective use of recycling bins by the public.

8

COMMENTS AND RECOMMENDATIONS

PREAMBLE

8.1 Despite years of implementation, the effectiveness of the Government's installation of recycling bins has been called into question (see **para. 1.2**). Among the public views we received, many people remarked that some roadside recycling bins often overflowed or were ineffective because of misplacement of litter (see **para. 1.6**). While the quantity of recyclables collected from recycling bins in public places such as roadside is limited, amounting to less than 0.1% of the total amount of recyclables in Hong Kong annually (see **para. 7.8**), these bins are very conspicuous in the community. The effectiveness of these bins will directly affect public confidence in the authorities' measures on waste separation and recovery.

8.2 Since taking over the management of recycling bins in public places from FEHD in October 2020, EPD has implemented a number of improvement measures, including designing a new look for the recycling bins and converting the original litter compartment into collection of recyclables (mainly plastic bottles) to increase collection capacity and reduce the chance of misplacement of litter into recycling bins by the public (see **Figure 2**). Also, a rapid reporting system has been launched enabling the public to use the QR code or service hotline on the recycling bins or WhatsApp, an instant mobile messaging application, to report matters such as overfilled or damaged bins to the Contractor directly (see **Figure 6**). EPD has also stepped up the monitoring of the Contractor through various means, including the supervision teams formed by the Contractor as required by EPD, the quality assurance teams set up by a third-party organisation (i.e. the Hong Kong Productivity Council), and its own staff (see **paras. 3.8–3.21**).

8.3 Since the implementation of the above improvement measures by EPD, there has been initial improvement in the management of recycling bins in public places (see **paras. 3.22–3.24**). We find the efforts of EPD commendable. We expect EPD to continue monitoring the usage of recycling bins and properly adjust their locations and collection frequency, thereby improving their operation and reviving public confidence in using them.

8.4 In light of our findings, we have the following comments and recommendations regarding EPD's management and effectiveness of recycling bins.

LABELS ON RECYCLING BINS IN PUBLIC PLACES

8.5 According to EPD's current practice, members of the public are encouraged to use recycling bins for collecting three main types of waste paper and prioritising the recovery of waste plastic bottles (see **para. 5.1**). The existing labels on recycling bins in public places are rather simple (see **Figure 2**). Users of recycling bins can obtain more details on resource recovery (such as the strategies of "Clean Recycling of Three Types of Paper" and "Priority Recovery of Plastic Bottles", or the clean recycling procedures) by scanning the QR code on the bins (see **para. 3.3**). While EPD's idea of adding QR codes to the recycling bins is praise-worthy, it cannot be ruled out that some people do not bother to scan the QR codes and read the instructions. We reckon that the overly simple labels on the recycling bins fail to effectively minimise improper use of the bins and contamination of recyclables.

8.6 EPD would distribute recycling bin labels about "Clean Recycling of Three Types of Paper" and "Priority Recovery of Plastic Bottles" to Government departments responsible for recycling bin installation and private estates/buildings participating in the SSW Programme. The labels clearly indicate what types of recyclables are suitable for putting into recycling bins and the clean recycling procedures (see **Figure 9**). EPD told us that recycling bins at venues managed by dedicated staff are less prone to overflow and receive recyclables of low quality.

8.7 Accordingly, for more effective management of recycling bins in public places which are prone to problems, and as part of its publicity and education initiatives, EPD should display recycling information in a more straightforward manner for the public to learn about the proper way of using recycling bins more conveniently and speedily.

8.8 As EPD expects to gradually install newly designed bins after field trials (see **para. 4.4**), we recommend that it review the existing labels on recycling bins in public places in one go, and consider providing more recycling information in textual and graphical forms on the newly designed bins.

INFORMATION AVAILABLE ON MOBILE APPLICATION

8.9 At present, members of the public can use the "Waste Less" mobile application of EPD to search for the locations of all recycling bins installed in public places throughout Hong Kong (see **para. 3.4**). In our site visits on a random sample of recycling bins, we found inconsistencies of several locations indicated by the app with the actual site situation, with no recycling bins at the indicated locations or nearby. In our second round of site visits after three months, the information remained not

updated (see **para. 6.3**) which was unsatisfactory. Besides, photographs of recycling bins shown in the app still displayed former designs of bins in public places under the management of FEHD. Consequently, the public might mistakenly perceive that those bins were still managed by FEHD. We are pleased to note that EPD has updated the information on the app in early February 2022 (see **para. 6.5**). We recommend that EPD update information available on the app in a timely manner to ensure its accuracy.

COLLABORATION WITH OTHER DEPARTMENTS

8.10 Taking reference from the collaboration models with AFCD and LCSD, EPD is liaising with HD to explore further enhancements to the waste separation programme implemented in public housing estates, so as to ensure proper collection of recyclables by downstream recyclers (see **para. 4.3**). EPD also continues to promote the SSW Programme to more Government departments and offer necessary support. It strives to strengthen individual departments' existing resource recovery practice, thereby raising and collecting data on recycling effectiveness (see **para. 4.5**). We are pleased to learn that EPD is stepping up collaboration with other departments in different areas to promote waste separation at source and more effective management of recycling bins. As a matter of fact, recycling bins installed by HD in all public housing estates across Hong Kong cover a large population. Strengthened collaboration between EPD and HD should be helpful to enhance the recovery rate of the entire community.

8.11 Currently, among the departments responsible for recycling bin management, only EPD maintains statistics on the overall recovery rate of recycling bins (see **Table 5**). We consider the overall recovery rate of recycling bins highly useful for relevant departments to monitor the effectiveness of recycling bins, review their distribution and management strategies, and come to grips with the public's behaviour in relation to waste recycling. We recommend that EPD provide the departments responsible for recycling bin management with more technical support and actively encourage them to maintain more recycling data (such as the overall recovery rate of recycling bins), thereby facilitating the monitoring and adjustment of the management strategies of recycling bins.

RELEASE OF DATA ON OPERATION OF RECYCLING BINS AND SHARING OF SUCCESS EXPERIENCE

8.12 The views we received from members of the public show that many of them are sceptical about the effectiveness of recycling bins. Such a public perception has apparently taken root over the years. As EPD has taken over the management of recycling bins in public places since October 2020 and introduced a number of improvement measures subsequently, we consider that EPD may release data on the operation of those bins regularly, including the total collection quantities, quantities of recyclables, recovery rate, reports of overfilled bins, etc. This will enhance transparency of its services and facilitate objective understanding of the current

effectiveness of recycling bins by the public. If relevant data is available from other departments, EPD may consider releasing data on the operation of recycling bins managed by various departments in one go to provide a more comprehensive overview of their usage. More thorough, comprehensive and regular information disclosure should be conducive to boosting public confidence in using recycling bins.

8.13 Moreover, we recommend that EPD continue to step up publicity and education, including sharing via different channels success cases about how members of the public use recycling bins. The experience regarding active promotion of waste separation at source and clean recycling gained by residential estates awarded under the SSW Commendation Scheme and rural villages using roadside recycling bins is inspiring to the general community. The success experience can encourage more people to take part in waste reduction and recovery, and revive public confidence in the effectiveness of recycling bins.

LONG-TERM POLICY ON RECYCLING BINS IN PUBLIC PLACES

8.14 According to EPD's information, Green@Community, the community recycling network developed progressively since 2015, is well-received by the general public and a key ongoing initiative under the Waste Blueprint for Hong Kong 2035. In view of this development, EPD has removed roadside recycling bins located near the Recycling Stores (see **para. 3.5**) and increased the number of bins in rural areas (see **para. 3.7**) for more effective use of resources.

8.15 In the long run, EPD anticipates a declining demand for roadside recycling bins in urban areas. The role of recycling bins will also gradually transform into providing waste recycling support mainly for remote rural areas and residential premises on scattered sites. Such bins may even be completely replaced by Green@Community (see **para. 7.8**). The role played by recycling bins in public places in the Government's overall policy on waste separation and recovery is a policy issue not subject to our comments. Nevertheless, EPD should work out a schedule to review the policy positioning of recycling bins in public places for deciding on the way forward, and explain its decision for the public to understand why recycling bins in the community may be gradually reduced in number.

8.16 Meanwhile, should EPD decide to retain recycling bins in public places after review, we urge it to continue assessing any impact arising from waste charging due to be implemented later, including the usage of bins and the quality of collected recyclables. Corresponding measures should be adopted to ensure that recycling bins in public places continue to achieve efficacy.

RECOMMENDATIONS

8.17 In sum, The Ombudsman recommends that EPD:

(1) review the labels on recycling bins in public places and consider providing more recycling information in textual and graphical forms on the newly designed bins to enable the public to learn about the proper way of using recycling bins more conveniently and speedily (see **paras. 8.5–8.8**);

(2) update the "Waste Less" mobile application in a timely manner to ensure accuracy of information about recycling bins in public places (see **para. 8.9**);

(3) continue strengthening collaboration with other departments responsible for recycling bin management and actively encourage them to maintain more recycling data, thereby facilitating the monitoring and adjustment of the management strategies of recycling bins (see **paras. 8.10 and 8.11**);

(4) release data on the operation of recycling bins in public places regularly to enhance transparency of its services and facilitate objective understanding of the current effectiveness of recycling bins by the public (see **para. 8.12**);

(5) continue stepping up publicity and education, including sharing via different channels success cases about how members of the public use recycling bins, thereby encouraging more people to take part in waste reduction and recovery and reviving public confidence in the effectiveness of recycling bins (see **para. 8.13**); and

(6) work out a schedule to review the policy positioning of recycling bins in public places for deciding on the way forward, and explain its decision for the public to understand why recycling bins in the community may be gradually reduced in number or even completely replaced; if it is decided that recycling bins in public places be retained, continue assessing any impact arising from waste charging due to be implemented later, and adopt corresponding measures to ensure that recycling bins in public places will continue to achieve efficacy (see **paras. 8.14–8.16**).

ACKNOWLEDGEMENTS

8.18 The Ombudsman thanks EPD, FEHD, LCSD, AFCD and HD for their full cooperation in the course of this investigation, and members of the public for submitting

views and information.

Office of The Ombudsman
Ref: OMB/DI/444
April 2022

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